

WHAT IS CLAIMED IS:

1. A process for producing a synthetic quartz powder, the process comprising baking a silica gel powder made by a wet process, or a synthetic quartz powder made from the silica gel powder, under a low pressure atmosphere at a pressure of less than 100 Pa and at a baking temperature in a range higher than a temperature at which decarbonization occurs and lower than a temperature at which sintering occurs.

2. A process for producing a synthetic quartz powder, the process comprising baking a silica gel powder, made by a wet process, to form a synthetic quartz powder, where the baking is in air at atmospheric pressure and at a temperature in a range higher than a temperature at which hydroxyl groups are removed from the silica gel powder and lower than a temperature at which the silica gel powder sinters; and

baking the synthetic quartz powder under a low pressure atmosphere at a pressure of less than 100 Pa and at a baking temperature in a range higher than a temperature at which decarbonization of the synthetic quartz powder occurs and lower than a temperature at which the synthetic quartz powder sinters.

3. The process according to Claim 2, wherein
the air at atmospheric pressure is dry air or an oxidizing atmosphere;
the baking temperature in the air at atmospheric pressure is in a range from more than 800°C to less than 1400°C; and
the synthetic quartz powder is baked in the air at atmospheric pressure for a baking time of 5 to 70 hours.

4. The process according to Claims 1 or 2, wherein
the low pressure atmosphere is at a pressure of less than 50 Pa, and
the baking temperature is in a range from more than 600°C to less than 1400°C.

5. The process according to Claims 1 or 2, wherein the baking under the low pressure atmosphere is finished when the low pressure atmosphere reaches a preselected pressure.

6. The process according to Claim 5, wherein the preselected pressure is less than 5 Pa.

7. A synthetic quartz powder made by the process of Claim 1 or the process of Claim 2, wherein the synthetic quartz powder has a carbon content of less than 2 ppm and a hydroxyl group content of less than 50 ppm.

8. A quartz glass crucible made using a synthetic quartz powder, wherein at least a part of an inside surface of the crucible is made using the synthetic quartz powder of Claim 7 as a raw material.

9. A quartz glass crucible made from a synthetic quartz powder, wherein at least a part of an inside surface of the crucible is made using the synthetic quartz powder of Claim 7; and

a bubble content in a transparent glass layer less than 0.5 mm thick forming the inside surface of the crucible is less than 0.1 %.